Listing of Claims:

1-19. (Canceled)

20. (Currently amended) At least one high-k device, comprising:

a structure having a strained substrate formed thereover[[;]], the strained substrate comprising at least an uppermost strained-Si epi layer having a dislocation density of strained-Si epi of less than about 1E6/cm^2;

at least one dielectric gate oxide portion over the strained substrate[[;]], the at least one dielectric gate oxide portion having a dielectric constant of greater than about 4.0; and

a device over each of the at least one dielectric gate oxide portion to complete the at least one high-k device.

21. (Original) The structure of claim 20, wherein the at least one dielectric gate oxide portion is comprised of $Hf0_2$, $HfSi0_4$, N-doped hafnium. $HfSiO_X$, ZrO_2, $ZrSiO_X$ or N-doped zirconium silicate.

22. (Original) The device of claim 20, wherein the structure is a silicon substrate or a germanium substrate.

23. (Canceled)

24. (Original) The device of claim 20, wherein the strained substrate is comprised of only the uppermost strained-Si epi layer.

25. (Currently amended) [[The device of claim 20,]] At least one high-k device, comprising:

a structure having a strained substrate formed thereover, the strained substrate comprising only an uppermost strained-Si epi layer ~~wherein the strained substrate is comprised of only the uppermost strained-Si epi layer~~ having a thickness of from about 100 to 500Å;

at least one dielectric gate oxide portion over the strained substrate, the at least one dielectric gate oxide portion having a dielectric constant of greater than about 4.0; and

a device over each of the at least one dielectric gate oxide portion to complete the at least one high-k device.

26. (Currently amended) The device of claim [[20]] 25, ~~wherein the strained substrate is comprised of only~~ the uppermost strained-Si epi layer having a thickness of from about 150 to 300Å.

27. (Currently amended) The device of claim [[20]] 25, ~~wherein the strained substrate is comprised of only~~ the uppermost strained-Si epi layer having a thickness of from about 200 to 300Å.

28. (Currently amended) ~~The device of claim 20,~~ At least one high-k device, comprising:

a structure having a strained substrate formed thereover, the strained substrate comprising ~~wherein the strained substrate is comprised of the~~ an uppermost strained-Si epi layer, a middle relaxed $Si_{1-x}Ge_x$ layer and a lowermost graded Si_{1-y} Ge_y layer;

at least one dielectric gate oxide portion over the strained substrate, the at least one dielectric gate oxide portion having a dielectric constant of greater than about 4.0; and

a device over each of the at least one dielectric gate oxide portion to complete the at least one high-k device.

29. (Currently amended) The device of claim [[20]] 28, ~~wherein the strained substrate is comprised of the uppermost strained-Si epi layer, a middle relaxed $Si_{1-x}Ge_x$ layer and a lowermost graded Si_{1-y} Ge_y layer;~~ the uppermost strained-Si epi layer having a thickness of from about 100 to 500Å; the middle relaxed $Si_{1-x}Ge_x$ layer having a thickness of from about 1000 to 50,000Å; and the lowermost graded Si_{1-y} Ge_y layer having a thickness of from about 200 to 50,000Å.

30. (Currently amended) The device of claim [[20]] 28, ~~wherein the strained substrate is comprised of the uppermost strained-Si epi layer, a middle relaxed $Si_{1-x}Ge_x$ layer~~ where x is greater than 0 and less than about 0.50 and ~~a lowermost graded Si_{1-y} Ge_y layer~~ where y is 0 or about 0 proximate the structure and increases to about x proximate the middle relaxed $Si_{1-x}Ge_x$ layer, wherein $x \geq y$.

31. (Currently amended) ~~The device of claim 20,~~ At least one high-k device, comprising:

a structure having a strained substrate formed thereover, the strained substrate comprising ~~wherein the strained substrate is comprised of the~~ an uppermost strained-Si epi layer, a middle $Si_{1-x}Ge_x$ layer and a lower silicon oxide layer;

at least one dielectric gate oxide portion over the strained substrate, the at least one dielectric gate oxide portion having a dielectric constant of greater than about 4.0; and

a device over each of the at least one dielectric gate oxide portion to complete the at least one high-k device.

32. (Currently amended) The device of claim [[20]] 31, ~~wherein the strained substrate is comprised of the uppermost strained-Si epi layer, a middle $Si_{1-x}Ge_x$ layer and a lower silicon oxide layer,~~ wherein the uppermost strained-Si epi layer has a thickness of from about 100 to 500Å, the middle $Si_{1-x}Ge_x$ layer has a thickness of from about 700 to 1200Å and the lower silicon oxide layer has a thickness of from about 800 to 2000Å.

33. (Currently amended) ~~The device of claim 20,~~ At least one high-k device, comprising:

a structure having a strained substrate formed thereover, the strained substrate comprising ~~wherein the strained substrate is comprised of the~~ an uppermost strained-Si epi layer over an upper relaxed $Si_{1-x}Ge_x$ layer over a graded Si_{1-y} Ge_y layer over an epi layer over a lowermost relaxed Si_{1-z} Ge_z layer[[;]], wherein $x \geq y \geq z$;

at least one dielectric gate oxide portion over the strained substrate, the at least one dielectric gate oxide portion having a dielectric constant of greater than about 4.0; and

a device over each of the at least one dielectric gate oxide portion to complete the at least one high-k device.

34. (Currently amended) The device of claim [[20]] 33, ~~wherein the strained substrate is comprised of the uppermost strained-Si epi layer over an upper relaxed $Si_{1-x}Ge_x$ layer over a graded Si_{1-y} Ge_y layer over an epi layer over a lowermost relaxed Si_{1-z} Ge_z layer;~~ the uppermost strained-Si epi layer having a thickness of from about 100 to 500Å; the upper relaxed $Si_{1-x}Ge_x$ layer having a thickness of from about 1000 to 50,000Å; the graded Si_{1-y} Ge_y layer having a thickness of from about 2000 to 50,000Å[[,]]; the epi

layer having a thickness of from about 20 to 500Å; and the lowermost relaxed Si_{1-z} Ge_z layer having a thickness of from about 200 to 50,000 Å.

35. (Currently amended) The device of claim [[20]] 33, ~~wherein the strained substrate is comprised of the uppermost strained-Si epi layer over an upper relaxed $Si_{1-x}Ge_x$ layer over a graded Si_{1-y} Ge_y layer over an epi layer over a lowermost relaxed Si_{1-z} Ge_z layer;~~ the uppermost strained-Si epi layer having a thickness of from about 150 to 300Å; the upper relaxed $Si_{1-x}Ge_x$ layer having a thickness of from about 2000 to 40,000Å; the graded Si_{1-y} Ge_y layer having a thickness of from about 500 to 25,000Å; the epi layer having a thickness of from about 50 to 200Å; and the lowermost relaxed Si_{1-z} Ge_z layer having a thickness of from about 500 to 25,000Å.

36. (Currently amended) The device of claim [[20]] 33, ~~wherein the strained substrate is comprised of the uppermost strained-Si epi layer over an upper relaxed $Si_{1-x}Ge_x$ layer,~~ where x is no less than y and less than about 0.50, ~~over a graded Si_{1-y} Ge_y layer,~~ where y is no less than z proximate the epi layer and increases to about x proximate the upper relaxed $Si_{1-x}Ge_x$ layer, and ~~over an epi layer over a lowermost relaxed Si_{1-z} Ge_z layer~~ where z is greater than 0 and less than about 0.50.

37. (Currently amended) The device of claim [[20]] 33, wherein the at least one dielectric gate oxide portion being comprised of HfO_2 or $HfSiO_4$.

38. (Currently amended) The device ~~structure~~ of claim [[20]] 41, wherein the ~~strained substrate further includes a~~ relaxed Si_{1-y} Ge_y layer has ~~having~~ a thickness of from about 200 to 30,000Å, the ~~under the uppermost strained-Si epi layer; a~~ constant Si_{1-y} Ge_y layer has ~~having~~ a thickness of from about 200 to 20,000Å, the ~~under the relaxed Si1-y Gey layer; a~~ silicon epi layer has ~~having~~ a thickness of from about 20 to 500Å, the ~~under the constant Si1-y Gey layer; and a~~ constant Si_{1-z} Ge_z layer has ~~having~~ a thickness of from about 200 to 20,000Å, ~~under the silicon epi layer;~~ and the uppermost strained-Si epi layer has ~~having~~ g a thickness of from about 20 to 500Å.

39. (Currently amended) The device ~~structure~~ of claim [[20]] 41, wherein the ~~strained substrate further includes a~~ relaxed Si_{1-y} Ge_y layer has ~~having~~ a thickness of from about 300 to 5000Å, the ~~under the uppermost strained-Si epi layer; a~~ constant Si_{1-y} Ge_y layer has ~~having~~ a thickness of from about 300 to 5000Å, the ~~under the relaxed Si1-y Gey layer; a~~ silicon epi layer has ~~having~~ a thickness of from about 50 to 300Å, the ~~under the constant Si1-y Gey layer; and a~~ constant Si_{1-z} Ge_z layer has ~~having~~ a thickness of from about 300 to 5000Å, ~~under the silicon epi layer;~~ and the uppermost strained-Si epi layer has ~~having~~ a thickness of from about 50 to 300Å.

40. (Currently amended) The device ~~structure~~ of claim [[20]] 41, wherein the at least one dielectric gate oxide portion is comprised of $Hf0_2$ or $HfSi0_4$.

41. (Currently amended) ~~The structure of claim 20,~~ At least one high-k device, comprising:

a structure having a strained substrate formed thereover, the strained substrate comprising an uppermost strained-Si epi layer, ~~wherein the strained substrate further includes~~ a relaxed Si_{1-y} Ge_y layer under the uppermost strained-Si epi layer[[;]], a constant Si_{1-y} Ge_y layer under the relaxed Si_{1-y} Ge_y layer[[;]], a silicon epi layer under the constant Si_{1-y} Ge_y layer[[;]], and a constant Si_{1-z} Ge_z layer under the silicon epi layer[[;]], wherein the uppermost relaxed-Si epi layer is comprised of Si_{1-x} Ge_x wherein x is constant or graded;

at least one dielectric gate oxide portion over the strained substrate, the at least one dielectric gate oxide portion having a dielectric constant of greater than about 4.0; and

a device over each of the at least one dielectric gate oxide portion to complete the at least one high-k device.